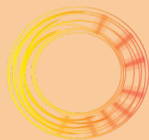


Memory Lab Intro to Digital Concepts

Webinar #3

Friday, March 12, 2021



CALIFORNIA
REVEALED

Memory Lab
Network
dc public library



California
STATE LIBRARY
FOUNDED 1850
PRESERVING OUR HERITAGE. SHAPING OUR FUTURE



INSTITUTE of
Museum and Library
SERVICES



Memory Lab Webinars

January: Memory Lab Model(s)

February: Goals & Expectations

March: Intro to Digital Concepts

April: Intro to Audiovisual Preservation

May: Equipment Set Up, Workflows, Troubleshooting

June: Training Staff

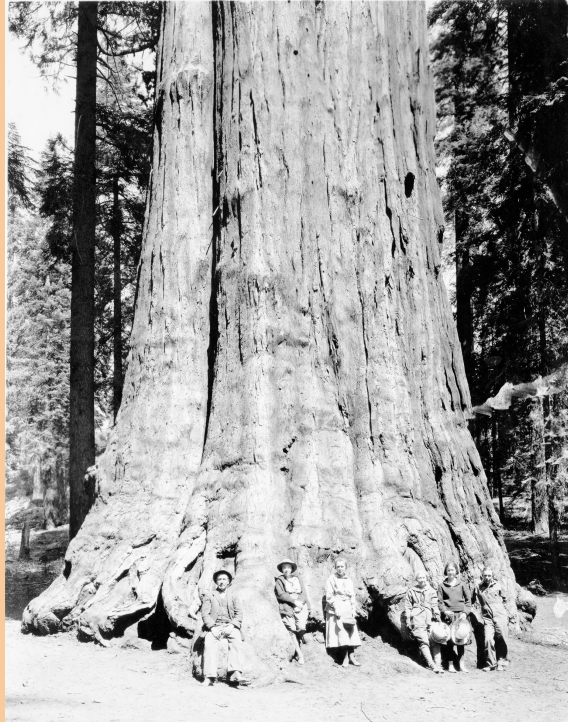
July: Evaluating

August: Sustaining & Expanding

Register: <https://californiarevealed.org/memorylabs>

MLN Deep Dive: <https://memorylabnetwork.github.io>

Intro to Digital Concepts: Bring Preservation Home



Permalink: <https://californiarevealed.org/islandora/object/cahpp%3A176274>

Intro to Digital Concepts: Greetings from Tulare County!



Visalia Branch Library



Tulare County Museum

Intro to Digital Concepts: Tulare County Plans

- Full Scale Memory Lab and Mobile Memory Lab
- Full Scale Memory Lab will operate Monday-Friday, 9 am to 5 pm with 4 hour reservations
- Mobile Memory Lab will be reserved for use by members of the Museum Alliance of Tulare County and Tulare County Library branches for community outreach and use

Memory Lab Planning Template: <https://californiarevealed.org/sites/default/files/CAML-Goals-Plans-Form.pdf>

Mobile Memory Lab



- Epson V600 Scanner
- Gator Rack Bag (for VCR)
- 2020 Lenovo IdeaPad 3 and bag (Laptop for recording oral histories)
- Pelican Case (rolling case for scanner transport)
- Seagate Backup Plus (Digital storage)
- Wireless mouse
- GE 6 Outlet Surge protector
- Clearclick Video to Digital Converter
- Polsen Omnidirectional Lavalier Microphone (For oral histories)
- Cleaning supplies and gloves

In-House Memory Lab



- Computer 8GB RAM, 500 GB storage
 - All-in-one PC with CD/DVD writer
- Flatbed scanner: Epson 10,000XL
- Film scanner: Wolverine
 - Super 8mm; Regular 8mm
 - Picture only (no sound)
- 3.5" floppy disk drive



In-House Memory Lab Video Equipment

- Prosumer and consumer VHS decks
- DVCAM deck
- Monitor
- Time Base Corrector (TBC)
- Analog to Digital converter
- Power conditioner

LAPL Memory Lab's Video Rack

In-House Memory Lab Audio Equipment

- Audiocassette deck
- CD player
- Audacity



LAPL Memory Lab's Audio Rack

Intro to Digital Concepts: Digitization Fundamentals

- Identification, selection, organization
- Analog to digital signal conversion
- Standards
- Calibration of equipment (QA)
- Signal tests & targets (QA)
- File naming & embedding metadata
- Quality control (QC)
- Digital Preservation
- Access

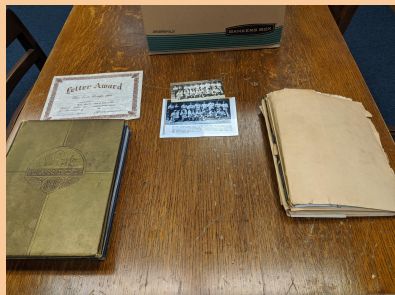
Digitization Fundamentals: Identification, selection, organization



Permalink: <https://californiarevealed.org/islandora/object/camp%3A174446>

Digitization Fundamentals:

Identification, selection, organization



How do you start organizing? Clump!

“Art of Clumping”: organizing like items to make sense of what you have

- Use a clean, clear area (no dust, etc) to clump
- Gloves vs. clean hands
- Figure out order and recognize patterns by topic or material type
- Like things together by year, event, or type of content
- Create categories (photos, papers, slides, etc)
- Do not use tape or staples
- Create reference photos if needed



Your Personal Archiving Project: Where Do You Start?

<https://blogs.loc.gov/thesignal/2016/05/how-to-begin-a-personal-archiving-project>

Digitization Fundamentals:

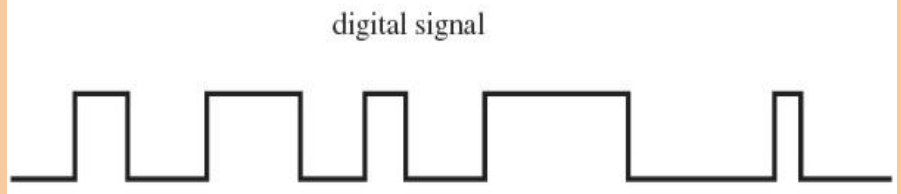
Analog to digital signal conversion



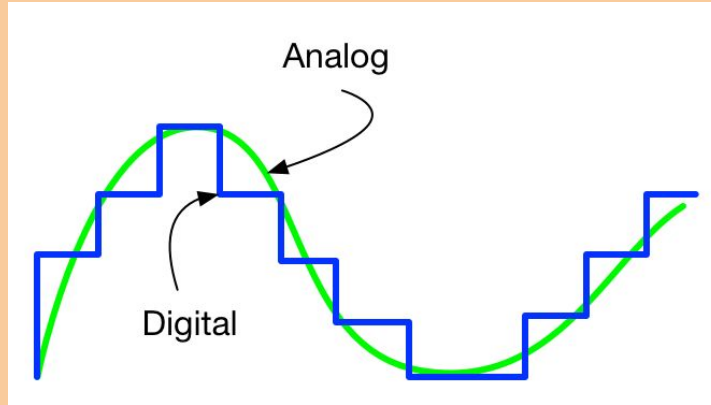
analog signal



digital signal



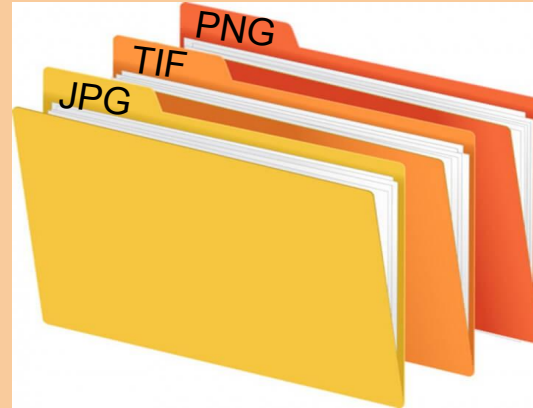
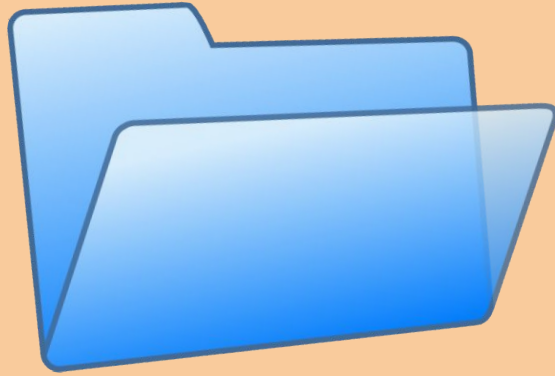
Digitization Fundamentals: Standards/A-D Conversion



- Goal: converting an analog signal to digital signal and maintaining an accurate representation of the original information - ideally uncompressed
- Use camera or flatbed scanner
- Consider physical condition
- Consider peripherals: quality of equipment and clean scanning area (free of dust, etc.)

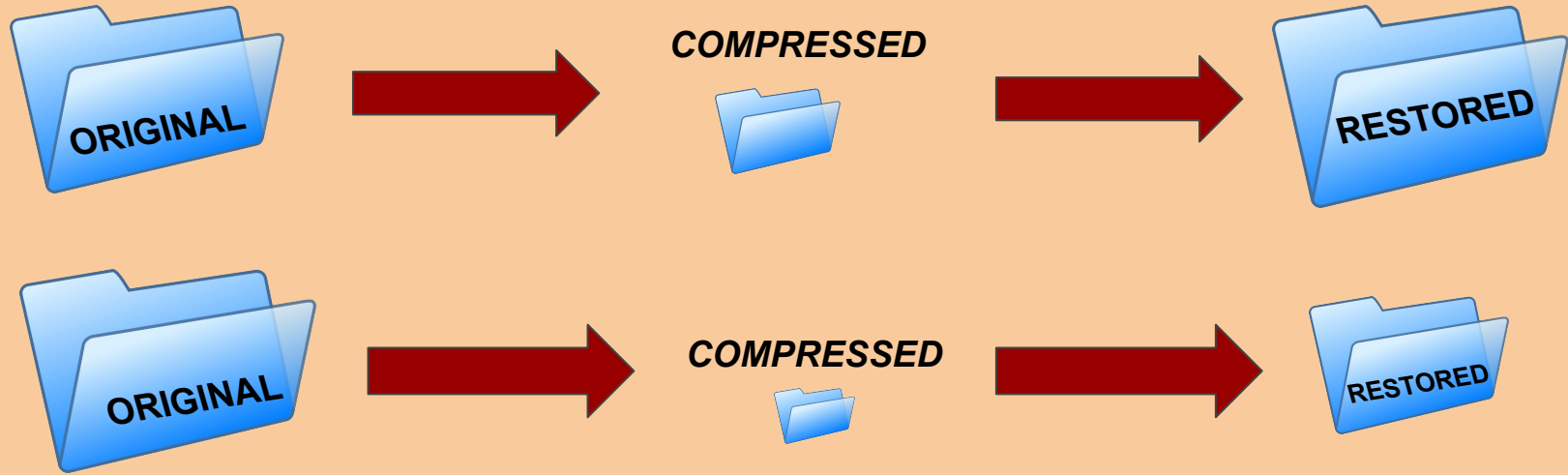
Digitization Fundamentals:

Standards/File Formats



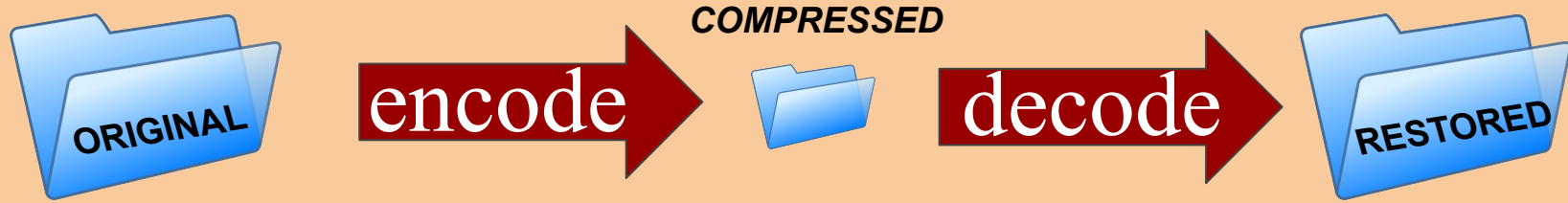
- What is a digital file?
 - Think of a physical folder: Stored information that is read by computer software and hardware
- What is a digital file format?
 - Different standards of what and how you store the information within the file

Digitization Fundamentals: Standards/Compression



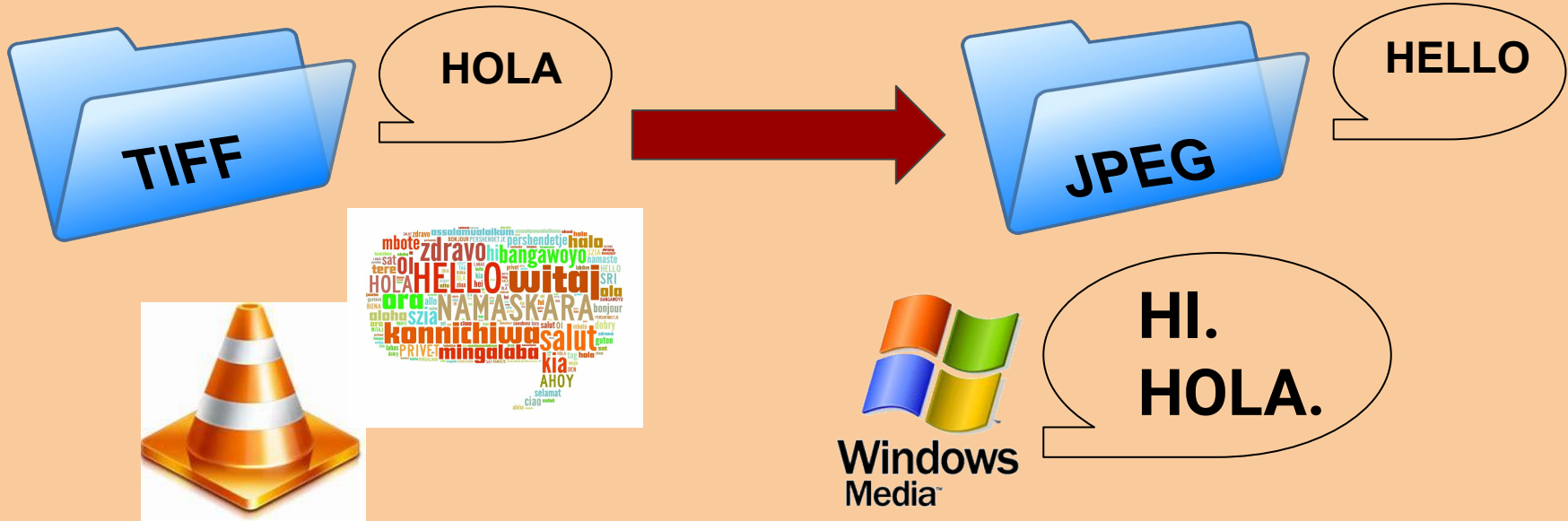
- What is compression?
 - The process of modifying, encoding, or converting the bit structure of data in such a way that it consumes less space
 - There are two types: *lossless* and *lossy*

Digitization Fundamentals: Standards/Codecs



- What is a codec?
 - A device or computer program for encoding or decoding a digital data stream
 - Encoding is the process of putting a sequence of characters (letters, numbers, punctuation, and certain symbols) into a specialized format for efficient transmission or storage
 - Decoding is the opposite process - converting an encoded format back into the original sequence

Digitization Fundamentals: Standards/Codecs



- What is a codec?
 - Transcoding is converting language or information from one form of coded representation to another. Like translating.

Digitization Fundamentals:

Standards/File Formats/Codecs

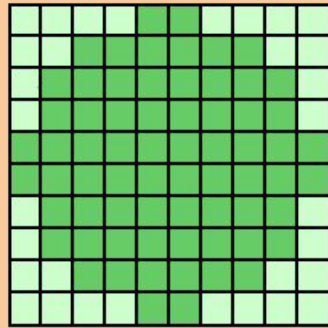
- No one-size-fits-all answer
- Lossless (.tiff) vs. lossy/compressed (.jpg)
- Quality matters - aim for highest resolution you can afford
- Lean toward open source and widely available

Recommendations based on media type:

- For texts documents: PDF/A
- For images: TIFF + JPG
- For audio: WAV + MP4
- For video: 10 bit uncompressed, ProRes + MP4

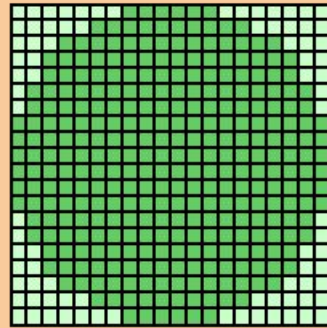
Digitization Fundamentals: Standards/Resolution

- Spatial Resolution/Frequency
- Optical Resolution
- DPI: Dots Per Inch



2,54 cm

10 dpi

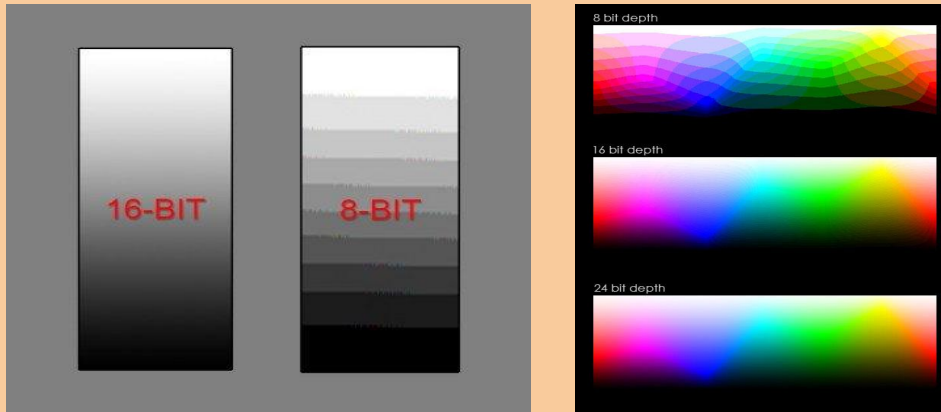


2,54 cm

20 dpi

Digitization Fundamentals: Standards/Resolution

- Tonal Reproduction
 - Bit-depth
 - Dynamic range
 - Color reproduction



Digitization Fundamentals: TCL Standards/Resolution



- Epson 10,000XL for full scale lab
- Epson V600 for mobile lab
- 24 bit color for papers and photos
- At least 300 dpi for papers
- At least 600 dpi, maximum 1200 dpi for photos
- The higher the pixel density, the longer the scan takes.
- Paper scans are saved as .pdf, photos are saved as .tiff and .jpg ideally.

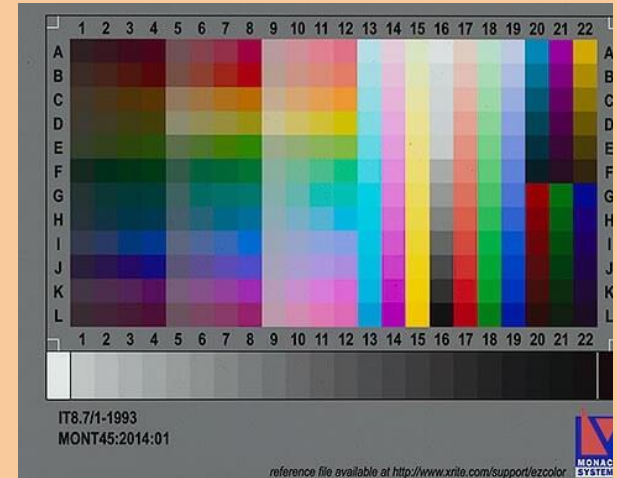
FADGI Guidelines: <http://www.digitizationguidelines.gov>

California Revealed Statement of Work: <https://californiarevealed.org/partners/sow>

Digitization Fundamentals:

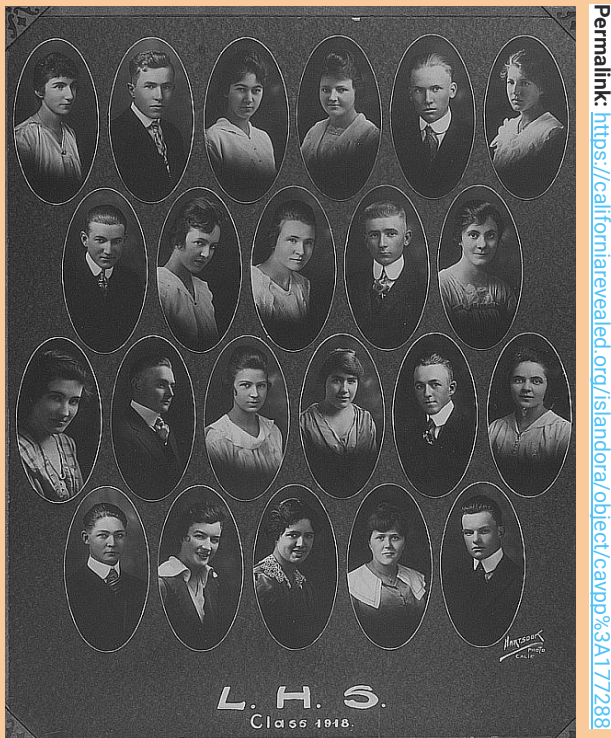
Calibration of equipment (QA)

- Ensures proper reproduction
 - Color and light intensity
- Devices: Monitor, scanner
- Use sheets, targets/signal tests, software to determine resolution and/or to calibrate
- Individual or batch



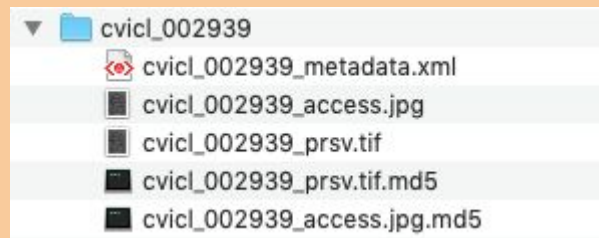
Digitization Fundamentals:

File naming & metadata



Permalink: <https://californiarevealed.org/islandora/object/cavp%3A177288>

- Title: 1918 Graduating Seniors, Lindsay (Calif.) High School
- Date created: 1918
- Description: This is a collection of portraits of members of the 1918 graduating class at Lindsay High School in Lindsay, CA. (Photo courtesy of Alma Manlove)
- Photograph (1 Page of 1)



Digitization Fundamentals:

Sample TCL metadata

Collection Form includes:

- Signed Agreement
- File name, title, medium
- Associated names
- Item creator and date created
- Item location
- Duration/Dimensions
- Donor relationship to item

A	B	C	D	E	F	G	H
196	tca0130		13	Tulare County	Sisters in Internment Camp,		
3368	tcd0297		1	Tulare County	Toddler with Ball, Tulare	George David	1905-1910
3369	tcd0298		2	Tulare County	Dean and Gertrude Smith in	George David	1906
3370	tcd0299		3	Tulare County	Unidentified Lady circa 1895,	George David	ca 1895
3371	tcd0300		4	Tulare County	Unidentified Baby Feeding	George David	ca 1905-1910
3372	tcd0301		5	Tulare County	Swimming Hole at Broder	George David	ca 1908
3373	tcd0302		6	Tulare County	Unidentified Men at Cabin in	George David	ca 1905
3374	tcd0303		7	Tulare County	Unidentified Ranch, Tulare	George David	1903
3375	tcd0304		8	Tulare County	Family Camping, Tulare	George David	ca 1920s
3376	tcd0305		9	Tulare County	Two Girls on Donkey, Sequoia	George David	Early 1900s
3378	tcd0306		10	Tulare County	Toddler "Reading the Paper,	George David	ca 1910

Basic Guidelines for Minimal Descriptive Embedded Metadata in Digital Images

by Embedded Metadata Working Group – Smithsonian Institution

<http://www.digitizationguidelines.gov/guidelines/GuidelinesEmbeddedMetadata.pdf>

Digitization Fundamentals: Quality Control (QC)

Permalink: <https://californiarevealed.org/islandora/object/cavpp%3A175681>



- Technical specifications
- Directory structure and file naming
- Accurate and complete metadata
- Run checksums
- Image quality
- Missing content
- Recruit staff or volunteers to check metadata if possible.
- Crowdsource QC using online copies

Digitization Fundamentals: Digital Preservation

Permalink: <https://californiarevealed.org/islandora/object/cavpp%3A176160>

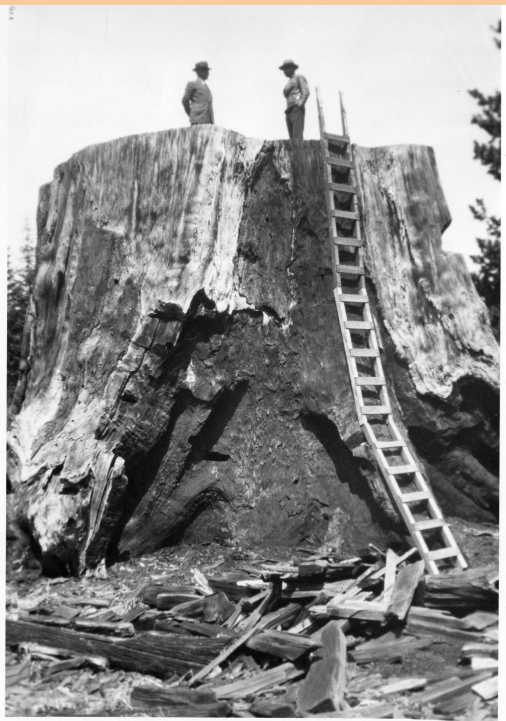


Digitization Fundamentals:

Digital Preservation

- Storage media, servers, and the cloud
 - Clearly label and organize hard drives
 - Consult with IT department (if available) about server storage
- Back up 3-2-1
 - 3 copies - 2 stored locally on different types of media - 1 offsite in a different geographic location if possible
- Check files annually
 - Place a readMe text file on the hard drive - an inventory of the files and update
 - Create checksums- Fixity is a free tool
 - Turn on drive(s) and try to open files.
- Consider migration as file formats change

Digitization Fundamentals: Tulare County Digital Preservation



- 3-2-1 method is used. 3 external hard drives are used. Two are onsite, one is kept at a branch 20 miles away.
- Copies are hosted by California Revealed and Internet Archive for preservation and public access.
- Copies are also hosted locally on an Omeka platform provided by our library consortium.
- Readme files with inventory and methodologies are placed in the same folder as digital copies.
- Volunteers annually check the files are the same on all backups.

LoC Personal Archiving: <https://www.digitalpreservation.gov/personalarchiving>

Digital Preservation Coalition Handbook: <https://www.dpconline.org/handbook>

Digitization Fundamentals:

Start small and start now

Functional Area	Level			
	Level 1 (Know your content)	Level 2 (Protect your content)	Level 3 (Monitor your content)	Level 4 (Sustain your content)
Storage	Have two complete copies in separate locations Document all storage media where content is stored Put content into stable storage	Have three complete copies with at least one copy in a separate geographic location Document storage and storage media indicating the resources and dependencies they require to function	Have at least one copy in a geographic location with a different disaster threat than the other copies Have at least one copy on a different storage media type Track the obsolescence of storage and media	Have at least three copies in geographic locations, each with a different disaster threat Maximize storage diversification to avoid single points of failure Have a plan and execute actions to address obsolescence of storage hardware, software, and media
Integrity	Verify integrity information if it has been provided with the content Generate integrity information if not provided with the content Virus check all content; isolate content for quarantine as needed	Verify integrity information when moving or copying content Use write-blockers when working with original media Back up integrity information and store copy in a separate location from the content	Verify integrity information of content at fixed intervals Document integrity information verification processes and outcomes Perform audit of integrity information on demand	Verify integrity information in response to specific events or activities Replace or repair corrupted content as necessary
Control	Determine the human and software agents that should be authorized to read, write, move, and delete content	Document the human and software agents authorized to read, write, move, and delete content and apply these	Maintain logs and identify the human and software agents that performed actions on content	Perform periodic review of actions/access logs
Metadata	Create inventory of content, also documenting current storage locations Backup inventory and store at least one copy separately from content	Store enough metadata to know what the content is (this might include some combination of administrative, technical, descriptive, preservation, and structural)	Determine what metadata standards to apply Find and fill gaps in your metadata to meet those standards	Record preservation actions associated with content and when those actions occur Implement metadata standards chosen
Content	Document file formats and other essential content characteristics including how and when these were identified	Verify file formats and other essential content characteristics Build relationships with content creators to encourage sustainable file choices	Monitor for obsolescence, and changes in technologies on which content is dependent	Perform migrations, normalizations, emulation, and similar activities that ensure content can be accessed

National Digital Stewardship Alliance (NDSA) Levels of Digital Preservation

<https://ndsa.org/activities/levels-of-digital-preservation>

Digitization Fundamentals:

Start small and start now

 			
Digital Readiness Levels			
Focus Area	Bronze	Silver	Gold
Plan and Prioritize	Set goals for your digital work that fit your organization's mission and policies. Revise existing policies to include digital work, or adopt a separate digital mission statement.	Identify content you want to share in digital format based on your organization's goals, mission and policies. Identify potential partners, resources, tools and platforms to meet your goals.	Make a plan for your digital project with timelines, roles, activities, goals and required resources. Share with partners participating in your project.
Obtain Permissions	Create and use permission forms and donor agreements, or modify existing ones, that include specific language for the use of born-digital or digitized collections.	Assess collection for copyright status. Identify collections items with other access restrictions or concerns, including items with privacy, ethical or cultural considerations.	Assign rights statements or Creative Commons licenses for collection items to be publicly shared online. Develop and share your organizational takedown policy and, if applicable, a statement on harmful content.
Digitize	Identify standards and procedures to be used to digitize physical materials or process born-digital content.	Undertake digitization or born-digital processing work either in-house or with an appropriate vendor or partner using identified standards.	Use or advocate for a quality control checklist to review digitized or born-digital content to confirm it meets identified standards.
Describe	Create and maintain a collection-level inventory of digital content. Identify metadata standards to be used for digital collections.	Using identified standards, create descriptive metadata for collection items to be shared online. Adopt a consistent file-naming convention.	Create expanded item-level metadata, using controlled vocabularies and a data dictionary.
Share	Gather and evaluate digital content. Organize and move content and associated descriptive information to a centralized location using a consistent folder and file organization scheme.	Review access goals and options for providing access to content. Choose a system or platform that meets your goals.	Make item-level metadata and content available for discovery and reusing. Follow accessibility standards for online content including alt text, transcripts and other accessibility best practices.
Store and Maintain	Store two copies of each unmodified archival file and related metadata. Check storage media annually and refresh as needed.	Store three copies of each archival file and related metadata. One copy should be stored off-site. Check and refresh storage media on a regular schedule.	Plan for future storage needs as your collection grows. Use software tools to check file integrity.
Evaluate	Identify primary users and ways to engage them in your digital collections.	Collect usage data. Consider using analytics tools, social media, or research inquiries to gather use stories.	Share your story with other practitioners to build community around digital work. Use data to inform future collection development work, outreach and programming.

Recollection Wisconsin Digital Readiness Levels

<https://recollectionwisconsin.org/cop>

Digitization Fundamentals:

Keep your originals!

- Store cool, dry, dim/dark, and pest-free
- Upgrade housing to acid-free folders and containers
- Label and document
- Keep hard copy inventory list with the items

Library of Congress Preservation Guidelines for Digitizing Library Materials

<https://www.loc.gov/preservation/care/scan.html>

DC Public Library's Memory Lab LibGuide

<https://libguides.dclibrary.org/memorylab/resources/physical-stuff>

Digitization Fundamentals: Access

The screenshot shows the 'California Revealed' website interface. At the top, there's a navigation bar with links: 'About', 'Browse Institutions', 'Browse Themes', 'Browse All', and 'Advanced Search'. Below this is a search bar containing 'Tulare County Library' and a search icon. The main content area is titled 'Tulare County Library' and features a description: 'A diverse collection of audio and video from Tulare County Library is represented in this collection. These include oral histories with local residents, presentations on local history, and recordings of dedication ceremonies for local landmarks.' It also includes contact information: 'Organization Website', '259-713-2723', and '200 W Oak Avenue, Visalia, CA 93291'. A 'Share this collection' section with social media icons is also present. Below this, a list of items is shown, with '3841 items (showing 1 - 20)' and a 'Recently Added' filter. The items are displayed in a grid format, showing thumbnails and titles such as 'Tulare, Calif. Chamber of Commerce Flight...', 'Alta District Historical Society Diane Ralston...', 'Alta District Historical Society Norman Berry...', 'Alta District Historical Society Racing...', 'Alta District Historical Society Jerry Chang...', 'Miss Tulare County Pageant-1980's', 'Alta District Historical Society Virginia Delgado...', and 'Miss Tulare County Pageant-1985'. On the left side, there's a 'SEARCH BY TERM' section with a dropdown menu set to 'Creator/Contributor' and a search icon. Below this is a 'TYPE' section with filters for 'Still Image (3673)', 'Sound (132)', and 'Moving Image (34)'. At the bottom, there's a 'SUBJECTS' section with filters for 'California--Emigration and immigration (5)', 'Indian reservations (4)', and 'Homesteading--California (3)'.

- Personal archives: private or shared?
- How will the content be presented and who are the users? Potential use can determine file formats.
- Digitization protects original copies.
- Best practices for onsite access to digital files.
- If digital files are online, direct patrons to view them there.

Digitization Fundamentals:

TCL Access

Permalink: <https://californiarevealed.org/islandora/object/cavpp%3A174697>



- Local access onsite by email request.
- Online access through California Revealed, Internet Archive, Omeka.
- Plans for reuse: use existing partnerships with local school districts and museums to supplement their curriculum and projects.
- Use digitized items and media for exhibits and programs, including hosting Home Movie Days.

Questions? Comments?



'Around the campfire.' Camp Sierra, Giant Forest 1910.

Thank you! Keep in touch!

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[library.ca.gov/services/to-libraries/copycat-grants](https://library.ca.gov/services/to-libraries/copycat-grants/memory-lab)

memory-lab

